

**Amendments to the Claims:**

Replace all prior versions and listings of claims in the application with the following list of claims.

1. (currently amended) A computer-implemented method implemented on a computer for pricing a financial derivative of a non-marketed variable  $x_e$ , the method comprising:
  - a) determining a market representative  $x_m$  useful in determining a value of the financial derivative;
  - b) retrieving from a storage medium into memory of the computer information associated with the non-marketed variable  $x_e$  and the market representative  $x_m$ ;
  - c) calculating on the computer a solution to an equation involving a price of the financial derivative  $V(x_e, t)$  defined as a function of  $x_e$  and time  $t$ , wherein the equation comprises a coefficient involving the information associated with  $x_e$  and  $x_m$ ; and
  - d) generating on the computer an output including the calculated price of the financial derivative[[.]] ;  
wherein the information associated with  $x_e$  and  $x_m$  comprises a drift rate of the non-marketed variable  $x_e$ , and a drift rate of the market representative  $x_m$ ;  
wherein the information associated with  $x_e$  and  $x_m$  comprises variances of the non-marketed variable  $x_e$  and the market representative  $x_m$ , and a covariance between the non-marketed variable  $x_e$  and the market representative  $x_m$ ;  
wherein the coefficient involving the information associated with  $x_e$  and  $x_m$  has the form  $\mu_e - \beta_{em}(\mu_m - r)$ , where  $\mu_e$  is a drift rate of the non-marketed variable  $x_e$ ,  $\mu_m$  is a drift rate of the market representative  $x_m$ ,  $r$  is an interest rate, and  $\beta_{em}$  is a factor derived from a variance of the market representative  $x_m$  and a covariance between the non-marketed variable  $x_e$  and the market representative  $x_m$ ;  
wherein the market representative  $x_m$  comprises a marketed asset or combination of such assets that is approximately most correlated with the non-marketed variable  $x_e$ .
2. (cancelled).

3. (cancelled).
4. (cancelled).
5. (cancelled).
6. (currently amended) The method of claim [[5]] 1 wherein the equation is an extended modified Black-Scholes equation [[is]] obtained from a standard Black-Scholes equation by replacing, in a term involving a first-order partial derivative of  $V(x_e, t)$  with respect to  $x_e$ , a coefficient  $r$ , representing an interest rate, by [[a]] the coefficient involving the information associated with  $x_e$  and  $x_m$ .
7. (original) The method of claim 1 wherein the equation is a discrete-time equation involving  $V(x_e, t)$  defined as a function of  $x_e$  and discrete time points  $t = k$ .
8. (cancelled).
9. (original) The method of claim 1 wherein the market representative  $x_m$  comprises a combination of multiple marketed assets associated with market sectors most closely associated with the non-marketed variable  $x_e$ .
10. (original) The method of claim 1 wherein the market representative  $x_m$  comprises a marketed asset or combination of such assets that is approximately equal to an overall market portfolio.
11. (original) The method of claim 1 further comprising calculating an optimal hedge.
12. (original) The method of claim 1 further comprising calculating a minimum variance of the error between an optimal hedge and the calculated price of the financial derivative.

13. (original) The method of claim 1 wherein the equation represents a risk-neutral discounted expected value of cash flows of the financial derivative.
14. (original) The method of claim 13 wherein a cash flow of the financial derivative is path-dependent.
15. (original) The method of claim 1 applied to derivatives of a set of non-marketed variables wherein the market representative  $x_m$  comprises a combination of multiple marketed assets, each most-correlated with a different non-marketed variable in the set of non-marketed variables.
16. (original) The method of claim 1 wherein the calculated price of the financial derivative includes cash flows at an intermediate time and a terminal time.
17. (original) The method of claim 1 wherein drift rates, an interest rate, variances, and covariances of  $x_e$  and  $x_m$  either vary with time or are governed by stochastic processes.
18. (original) The method of claim 1 wherein the cash flow depends on marketed variables as well as non-marketed variables.
19. (original) The method of claim 1 wherein the equation involves additional non-marketed variables.
20. (original) The method of claim 1 wherein the market representative is derived from a combination of multiple marketed variables, and wherein  $x_e$  and the multiple marketed variables are governed by either geometric Brownian motion or alternative processes.
21. (cancelled).
22. (cancelled).

23. (cancelled).
24. (cancelled).
25. (cancelled).
26. (cancelled).
27. (new) A method implemented on a computer for pricing a financial derivative of a non-marketed variable  $x_e$ , the method comprising:
  - a) retrieving from a storage medium into a memory of the computer information associated with a market representative  $x_m$  that is a marketed asset approximately most-correlated with the non-marketed variable  $x_e$ ;
  - b) calculating on the computer a price of the financial derivative of the non-marketed variable  $x_e$  by numerical solution of an equation in which a term  $\mu_e - \beta_{em}(\mu_m - r)$  is used in place of a standard drift rate  $\mu_e$  in a risk-neutral version of a process governing  $x_m$ ;
  - c) generating on the computer an output including the calculated price.
28. (new) The method of claim 27 wherein calculating the price of the financial derivative comprises evaluating an expected value of the financial derivative.
29. (new) The method of claim 27 wherein calculating the price of the financial derivative comprises solving an extended Black–Scholes equation containing the term  $\mu_e - \beta_{em}(\mu_m - r)$ .
30. (new) The method of claim 27 further comprising calculating an optimal hedge of the financial derivative using the market representative  $x_m$ .
31. (new) The method of claim 30 further comprising calculating a residual variance of the optimal hedge using the market asset approximately most-correlated with the non-marketed variable  $x_e$ .